UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/821,781	04/09/2004	Stefan Barkaro	5497-110/P04-102/UK/YUM/2	1454

57579 7590 07/15/2009

COATS & BENNETT/INFINEON TECHNOLOGIES
1400 CRESCENT GREEN
SUITE 300
CARY, NC 27518

EXAMINER
JAMAL, ALEXANDER

ART UNIT	PAPER NUMBER
2614	

MAIL DATE	DELIVERY MODE
07/15/2009	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Response to Arguments

1. Applicant's arguments have been fully considered but they are not persuasive.

As per applicant's argument that the claims recite first impedances being smaller than the load impedance so that the line driver output impedance matches the load impedance. The examiner understand applicant's point, but maintains that the claim as written in not enabled by the specification. The drive/termination impedance of the amplifier stage is determined by circuitry internal to the amplifier stage 3 (applicant's figure 2). It is not clear how making the claimed first impedance small will allow the driver termination impedance to match the load impedance. The impedances R1,R2,ZS will affect the impedance seen by the load, but that is not the driver output impedance. Applicant has still not stated how the drive/termination impedance is to be exactly matched to the load impedance.

As per applicant's comments that the impedance is matched via a gain term k. The examiner notes that applicant has not defined how k is determined. Applicant has stated that k is a function of the transconductance gains as well as the amplifier gain, however, applicant has not shown the interface between the transmit signal and the feedback inputs (via the transconductance amplifiers). The relationship between each individual amplifier gain and the claimed k value is not able to be determined because the complete transmit and feedback path interface is not show or described. Furthermore, applicant's specification does not disclose any particular combinations of impedance values, and amplifier gains that can exactly match a load impedance. Additionally, the examiner notes that the impedance of the load will be dependant

upon the frequency of the signals being transferred. Applicant has not shown enough details for one skilled in the art to determine the relationship between the individual amplifier gain stages, the resistor and impedance values, and the frequency of the transmit signal. All of these are needed to determine the 'k' value in terms of the load impedance.

As per applicant's arguments about determining the relative degree of the term 'much smaller', the examiner notes the above response and maintains that it is not clear how to determine the necessary relationships in order to implement the device as claimed. Additionally, the examiner notes that even applicant's response 'approximately the load impedance divided by the gain factor' is not clear as the term 'approximately' is not clear as there are no real world implementation values or relationships disclosed in the submitted specification that would allow one skilled in the art to determine exactly how to read 'much smaller'.

The examiner notes that in all of the redrawn and labeled figures included in applicant's remarks, the applicant still has not shown the interface between the feedback path and where the transmit signal enters the amplifier. There is no way to determine 'k' without this interface clearly disclosed.

Further, there are dependant claims that specify that the transmission line is an ADSL line. ADSL lines may change impedances many times (with the POTS phone going on/offhook). Applicant's specification has not disclosed any means of detecting the change in load impedance and adjusting the claimed 'k' value accordingly. The examiner contends that applicant's claimed device, as enabled by the specification would not function on an ADSL line with a shared POTS interface (or any transmission line where the impedance varies (pretty much every communications line !) .

As per applicant's response to the drawing objections, applicant states that the feedback signals are the transmit signals. This is not true. Without an independent input transmit signal, there will be no feedback signals. Applicant's arguments are not understood !

The examiner directs applicant's attention to http://en.wikipedia.org/wiki/Feedback_amplifier which shows an example of how a feedback signal is implemented properly.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alexander Jamal whose telephone number is 571-272-7498, and whose email address is alexander.jamal@uspto.gov

The examiner can usually be reached on M-F 8AM-5PM.
If attempts to reach the examiner by telephone or email are unsuccessful, the examiner's supervisor, Curtis A Kuntz can be reached on 571-272-7499.

The fax phone numbers for the organization where this application or proceeding is assigned are **571-273-8300** for regular communications and **571-273-8300** for After Final communications.

/Alexander Jamal/

Primary Examiner, Art Unit 2614

Examiner Alexander Jamal

July 14, 2009